

1874.

QUEENSLAND.

REPORT
ON THE
BRISBANE BOTANIC GARDEN.

PRESENTED TO BOTH HOUSES BY COMMAND.

Botanic Garden,
Brisbane, 8th May, 1874.

SIR,

I have the honor to submit my annual Report upon the work performed in the establishment under my charge during the last year, together with an outline of the improvements proposed to be carried out during next season.

I was enabled to state in my last Report that the weather had been highly favorable to vegetation generally, and it affords me much gratification to assert upon this occasion that the rainfall of the last season has exercised even a more beneficial effect. It has seldom occurred that Queensland has been visited with showers so frequent and wide-spread in their extent as during the last six months, and their influence has been felt throughout the greater part of the colony as well as in the Botanic Garden, which, I venture to say, never appeared before to better advantage.

The row of bunya bunya (*Araucaria Bidwillii*) along the walks on the banks of the river, as well as those trees within the iron railing fence in a line with Alice and George streets, and the others bordering the walks adjoining the Pinetum, have made wonderful progress in their growth during the past year. In the last two places the lower branches of the trees have been cut off a few feet from the ground in order to allow visitors to rest under their shade, an opportunity of being sheltered from the sun's rays, which is taken advantage of extensively on Saturdays and public holidays. The palms and cycads near the Director's residence, as well as those planted in other portions of the ground, have increased the size of their stems and spread their graceful feathery fronds in twelve months to an extent which formerly it took two or three years to attain. Indeed, the luxuriance of these generally seems to indicate that they have found conditions of soil and climate eminently favorable to their most perfect development. They appear to greatly attract the attention and excite the admiration of all visitors from the southern colonies.

The *Nymphaea Gigantea*, Hook. (purple water lily), *Nelumbium Leichhardtii*, W. H. (pink water lily), in the lagoons, are in a very flourishing condition, and exhibit a brilliant floral appearance. No object in aquatic vegetation can in my opinion vie with these two magnificent Queensland plants in fragrance, as well as in the radiant wealth of their peerless blooms—not even the far-famed *Victoria Regia*.

The Greenhouse has required no repairs since it was first erected in 1870. It is admirably adapted for the purpose for which it was intended—to exhibit and gradually acclimatise rare and other useful and ornamental plants indigenous to warmer climates than that of Brisbane. The want still remains of a hothouse, with its temperature artificially increased so as to be suitable for the plants of the low-lying equatorial regions.

The two reserves for shade trees and ornamental shrubs at the corners of Queen, Eagle, and Creek streets are making good progress in the growth of their vegetation. It affords me much pleasure to observe the flourishing appearance of the plants in the grounds attached to several of the public offices, which were furnished from this establishment. They are remarked upon in eulogistic terms by visitors to the colony, and probably have had a certain effect in inducing some of the residents of Brisbane to ornament in a similar way the spare land about their houses.

It is also very gratifying to receive, from time to time, communications from officials, some of whom reside in the far interior of the colony, stating that the plants with which they have been supplied are flourishing, and are well appreciated as improving the appearance of grounds attached to public buildings in localities where cultivation is rare, and ornamental gardening unknown.

The increased rate of wages for the men employed in the grounds, which has been granted by the Legislature, will, no doubt, have the effect of enabling me to command the services of skilled workmen to a greater extent than has hitherto been within my power.

Several important improvements are contemplated in the garden, with the view of making its appearance more attractive and adding to its utility, should pecuniary means and other circumstances permit. The flower-beds between the *Araucarias* and the parterres and borders on either side of the gravelled walks require to be re-arranged, so as to produce a better effect. In many instances the shrubs have grown

too large for their stations, and will require to be transferred to other spots where their introduction will be an improvement. The lower portion of the ground, set apart for cricket and other athletic sports, will be raised nine or twelve inches, and levelled.

In consequence of the great increase of late of plants for acclimatisation, or which are not easy of propagation, it will become necessary to make addition to the shade houses, which are required to protect the young vegetation from unfavorable winds or the direct heat of the sun.

The iron railing facing Alice and George streets will require repainting for its preservation and the improvement of its appearance. I would beg to suggest that this is a work that ought not properly to be placed under my supervision, or provided for out of the sum voted for the garden. That amount is small for the botanical objects for which this institution was intended, were they confined to the strictly economical branch. This should be the province of the Department of Public Works.

I am under manifold obligations to the mercantile firms of Messrs. J. and G. Harris, and Messrs. Bright Brothers, for conveying by their vessels, without charge, Wardian cases and parcels consigned from this establishment to England, Java, and other countries. I have also to thank the Australasian Steam Navigation Company for transmitting, free of cost, cases of plants from the different northern ports, as well as from Ipswich. There are also others to whom the garden is indebted in a similar manner.

I have continued to supply Commander Bedwell, R.N., of the "Pearl," with plants and seeds for the islands off the coast; and, as his surveying trips extend farther to the north, these places will thus afford vegetable food for shipwrecked sailors, and may also become nurseries from which the inhabitants of the main land can be supplied with useful plants for propagation. Captain Bedwell also provides animal food for castaways on the uninhabited islands, by landing on them pigs and goats at places where they can breed and increase.

The Commissioner of Police has still continued to send a man to patrol the gardens every afternoon, and two upon Sundays. Their presence is necessary to prevent damage that might be occasioned by mischievous youths. I cannot, however, speak too highly of the conduct of the general public, who, while enjoying the recreation afforded by the grounds, are careful to avoid committing injury. This was especially noticeable at the gathering of the school children, for it is only natural to suppose that the young folks, when excited by play, might damage the beds and plants. Even as regards the exception to which I have alluded, only a word or two was sufficient to put a stop at once to the conduct complained of. I may add that some of the chief offenders of former years are making a recompense as they grow older, and appear to take pleasure in bringing in plants and seeds on their return from the bush.

A catalogue of plants in the garden was prepared for the press more than twelve months ago, and the necessity of its publication is continually being forced upon my attention. Its object, besides affording information to visitors, is to facilitate mutually advantageous exchanges with similar establishments and the horticulturists of other colonies and countries. Owing to the lapse of time since the manuscript catalogue was forwarded, some additions will have to be made in order it may be complete to date.

In my last report I referred to the loss I had suffered of collections of dried specimens on account of the dampness of the walls of the library in which they were deposited. The evil has increased lately, so much so, that it would be useless for me to attempt to keep a herbarium, and for the same reason there were few additions made to the books in the library during last year. The dampness is not confined to this portion of the building, but extends to every room, although this drawback could no doubt be remedied or entirely removed by an officer of the department charged with the erection of public buildings.

I still have the pleasure of furnishing the Brisbane Grammar School, for the instruction of the pupils, with specimens that afford types of the different varieties of vegetation. During the last year the female branch of the Normal School has been similarly supplied for the same object. From the frequent applications made for flowers to be modelled in wax, it would appear that the art is becoming much in favor. I am often requested to give flowers to be copied in drawing, and scarcely a week passes but some artist is engaged in sketching the different ornamental plants that grow in the garden. In many respects, more or less direct, this establishment may lay claim to be of use for educational purposes.

At the request of the Agent-General, Mr. Daintree, I furnished him with samples of the Darling Downs wheat, oats, maize, barley, and also with tea and coffee berries, with their manufactured produce, together with cayenne pepper grown and manufactured in Queensland.

The collection of Queensland plants and products at the Intercolonial Exhibition, held in Sydney last year, appeared to create much interest, and many enquiries were made to me with regard to them, and to the capabilities of the colony. I have reason to believe that the attention thus directed to Queensland upon this and the previous occasions has been the means of introducing capital here from New South Wales and Victoria, and encouraging the influx of a most desirable class of settlers from those colonies.

In connection with this subject, I may state I have had frequent enquiries from private individuals as to the best sorts of trees, &c., to plant. I endeavor to answer all such questions, but my time being so much taken up with pressing duties, and having no clerical assistance, delay is unavoidable. During my absence at the North, the correspondence greatly accumulated, and I have not been able to bring up the arrears.

The Experimental Department of the garden still continues to prove its utility in the introduction and distribution of plants yielding products of commercial value, or which would otherwise be desirable additions to our present limited list of agricultural and horticultural vegetation. Enquiry has been made for some of the medicinal herbs by invalids, and it is gratifying that we are able to supply the demand. The requests for the seeds of fibre-producing plants have been too numerous for me to comply with the whole of them. An indigenous species of *Musa*, or Banana, has been known to exist in the North, and I discovered two others whilst with the late Expedition. I feel assured that these will produce a fibre at least equal to Manilla hemp, and probably superior, as the trees are of a more robust habit than *Musa textilis*.

The demand for sugar-cane continues, and experiments appear to be made in its cultivation in several hitherto untried localities. I am in expectation of receiving from Java cuttings of a number of new varieties, some of which will probably be found suited to the climate and soil of Queensland.

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I am still frequently asked for the seeds of dye-producing plants, especially of Indigo, for the planters upon the northern rivers. The growth and manufacture of indigo will probably assume the proportions of a valuable and important interest in the tropical regions of the colony, whenever labor can be obtained at a sufficiently cheap rate.

The experimental Coffee plantation has thriven well this year, and its appearance has caused a demand from northern visitors for plants and seeds. Amongst other calls for distribution the principal have been for mulberry, olive, tea, palm oil, lavender, senna, Turkey rhubarb, cocoa, clove, cinnamon, nutmegs, vanilla, ginger, walnut, hickory nut, breadfruit, jack, alligator pear, Chinese date plum, mangosteen, mango, durian plants, and American vine cuttings, &c., &c.

On account of the dryness of the season at the time of flowering, some of the fruit-bearing trees did not yield as well as in former years—such as the China date plum, the alligator pear, the custard apple, the cherimoya, &c. On the other hand, the dry weather at the same period was favorable to the mango tree, which produced a more than an average crop. The fructification of the latter is impeded, and that of the first-named fruit tree promoted, by a moderate amount of moisture.

Living plants and seeds have been issued during the year to 543 individuals and establishments, as follows:—64,000 sugar-cane cuttings, 7,000 coffee plants, 2,300 tea plants, 3,000 ginger roots, 300 papers of tobacco seed, 20 lbs. of indigo seed, 50 lbs. of South Sea Island cotton seed, 20 lbs. of New Orleans cotton seed, 10 lbs. of sun hemp seed, 10 lbs. jute seed, 300 mango plants, 353 jack plants, 200 Chinese date plum, besides 500 packets of seeds, and 11,000 of other useful and ornamental plants. A great demand is springing up for genuine seeds of Australian timber trees from Northern India, California, as well as the Atlantic States, Southern Europe, and other countries. The requisitions made have been complied with as far as possible. I have also supplied a large quantity of roots of buffalo grass (*Stenotaphrum camplanatum*) for binding railway embankments, a purpose for which it is eminently well adapted.

The number of contributors of seeds and plants from different persons and establishments during the past year has been 120. Amongst the more valuable donations worthy of a special record, were two large specimens of *Encephalartos horridus*, *Encephalartos Lehmanni*, with a collection of thirty species of rare cactus, &c., from Haage and Schmidt, of Erfurt; a collection of seeds from the Agricultural Department of Washington, United States, &c., a list of which will be given in the Appendix. Amongst the more useful plants received I may mention, *Eleusine coracana* (Gaert.), *Embryoptires glutinifera* (Rox.), *Guzatia oleifera* (Dec.), *Inga dulcis* (Will.), *Sterculia villosa* (Rox.), *Ximenia Americana* (Lin.), *Andropogon Martini* (Rox.), *Balsamadendron agalloch* (W. and A.), *Musa Jaceii* (W. H.), *Ficus Colossea* (F. M.), &c.

I anticipate that a considerable impulse will be given to the system of interchange of plants by the establishment of the Torres Straits and Californian Mail Services. The advantage cannot fail to be great of being placed in speedy communication with America, and with Java, and the other islands and countries of Asia, which are so rich in useful and ornamental vegetation of descriptions peculiar to them. The botanists, curators of public gardens, and the proprietors of private establishments in those countries, could be supplied with what they would no doubt consider to be a sufficient return for their contributions, as they show a great desire to obtain Australian plants, many of which are not, as yet, to be obtained except in Queensland.

The following list includes the principal plants which have flowered or borne fruit during the past year:—*Cocos flexuosa* (Mart.), nine years old; *Euterpe oleracea* (Mart.), ten years old; *Oreodoxa regia*, eighteen years old; *Areca horrida* (Rox.), *Macadamia ternifolia*, five years old; *Nepheleum lappaceum* (L.), *Artabotrys odoratissimus* (R. B.), *Araucaria excelsa* (R. B.), fifteen years old; *Antigonon leptopus*, &c.

Owing to the favorable weather I had not many demands for grass seed. The species in the garden have done well, and I hope to be in a position to have a large stock for distribution for next season. During the late Expedition I collected the seeds of several different grasses, and shall no doubt be able in my next Report to compare them with those already introduced.

I would beg to suggest that the time has now come when provision should be made for Botanic Gardens or recreation reserves whenever a new township is laid out; that is, that the survey should be made on a design prepared by a thoroughly competent person, who, whilst making due provision for the trade and commerce of the proposed town, should at the same time take into consideration the natural features of the site, reserving the most suitable position for parks and a botanic garden, thus securing the means of healthful exercise and recreation within easy distance of the centre of the town. In many instances the pleasure and enjoyment of our public parks and gardens are very much marred by their distance from the centres of population, making it either a labor or an expense to reach them. Every reserve made for the purpose suggested should be clearly defined by marked trees or permanent posts, and the removal of all timber therefrom strictly prohibited, under penalty of a heavy fine. I make this suggestion from observation of what has taken place at Brisbane, Ipswich, Maryborough, and Rockhampton, where the instances are most notable; but there are many other places which might be taken as examples. In these localities we find the reserves denuded of almost every indigenous tree, and when they should be pleasant and shady retreats from the heat of the day, the trees which have been planted to cover the nakedness of the land are yet in their infancy, or even have yet to be planted; whilst, to restore the land to its pristine state, would require the growth of scores of years.

On the other side, the adoption of such a course as that I now suggest would leave all the indigenous timber intact, with, in many cases, noble forest trees of the growth of centuries. By leaving a judicious selection of these, and, as the means at the disposal of the conservation of the reserve permitted, adding new species and varieties from time to time, no great period would elapse before there would really be afforded the results for which such reserves must be intended—the means of the recreation, instruction, and health of the people.

During my late visit to Port Denison, Cleveland Bay, and Cardwell, enquiries were made of me as to what trees would be most suitable for shading the streets and public drives of those tropical portions of the Queensland coast.

On a previous visit, some years ago, I noticed many ornamental trees along the different beaches which would be useful for shade; but they were cut down afterwards by the early residents, no doubt for the purpose of opening a view of the sea, and it will be the work of years to replace them. I examined

some of the trees that have been latterly introduced for shading the streets, and found these were unhealthy in appearance, and had made little or no growth, although much labor and expense had been bestowed upon them. Such trees, for instance, as the *Poinciana Regia*, *Thespesia populnea*, Saovaya grass tree, &c., can hardly be expected to thrive when they are exposed unsheltered to the strong sea breeze. I have promised to forward to the towns mentioned, at the proper time, shade trees which my experience has led me to believe will be adapted to the peculiar circumstances of each place.

During my stay at Cardwell I visited the ground that has been proclaimed as a reserve for a Botanic Garden, and have to report that it is the most suitable as well as the most convenient situation that could be selected for the purpose it is intended for in the neighborhood of Cardwell. Fresh water can be had for sinking near the beach. Upon the reserve there are some good specimens of trees left, which will be of very great service on account of their shade, shelter, and ornamentation. They consist mostly of the genera *Eugenia*, *Calophyllum*, *Eucalyptus*, *Acacia*, *Melaleuca*, *Casuarina*, *Cycas*, *Pandanus*, &c., &c.

I would suggest that part of the reserve be fenced in at once, say five chains back from the beach along the whole length; also the south end. The north end is bounded by the creek. Walks, ten to twelve feet wide, should be formed at intervals of two chains apart. The under-brush could be cleared off, leaving all that is useful as well as ornamental. By this arrangement, there will be sufficient space to plant a large collection of trees, shrubs, &c., that would prove invaluable to the inhabitants in and around the district of Cardwell. The portion of ground I have just referred to could be maintained at a moderate expense for some years, and when population increases, a larger amount must be incurred in laying out more ground.

Whilst on this subject, I would beg to call attention to the expediency of setting apart four hundred acres upon both the Johnstone and the Daintree rivers, these districts offering better advantages, as regards aspect and soil, than the reserve at Cardwell possesses for the cultivation of the Clove (*Caryophyllus aromaticus*), the Nutmeg (*Myristica Moschata*), the Vanilla (*Vanilla aromatica*), the Cocoa (*Theobroma cacao*), the Caca (*Erythroxylon coca*), the Mangosteen (*Garcinia Mangostana*), the Durian (*Durio Zebithinus*), the Bread-fruit (*Artocarpus incisa*), &c., &c., which require some more degrees of heat and moisture to bring them to perfection than can be had at Cardwell. In fact, with the vast variety of climate and soil of Queensland, it must of necessity be the case that each locality has a distinct description of vegetation most suited to it.

The Reserve proclaimed at Toowoomba, on the Darling Downs, has long been needed for the successful cultivation of plants requiring a much cooler region than the neighborhood of Brisbane. The elevation and aspect are well adapted for the grape-vine, the peach, the apricot, the nectarine, the plum, the cherry, the apple, the pear, the walnut, the hickory-nut, the Spanish chesnut, the hazelnut, the Jerusalem filbert, the fig, the strawberry, the hop, and the orange, not to speak of the various useful and ornamental trees and shrubs that adorn the parks of the old country, such as the oak, the horse-chesnut, the alder, the birch, the hornbeam, the beech, the Guelder rose, &c., &c. There might be also added many of the trees of North America, such as the glorious magnolias, and others, the mere enumeration of the names of which would occupy too much in this report.

I regret to observe that some of the Reserves in this part of the colony which have been vested in trustees have not been improved beyond the extent of fencing them in and making the land a source of income by converting it into a grazing paddock. Were only the outer portion of these Reserves planted with useful and ornamental trees, an object not without benefit to the public would be gained. For purposes of this kind, it is perhaps unnecessary to say that plants can always be had, at the proper season, from this establishment.

I had the honor, on the 30th January last, to transmit to you a report upon the nature of the country I had inspected, whilst with the Queensland North-East Coast Expedition, from the end of September until the end of December, 1873. I then stated that I should subsequently describe the botanical character of the Bellenden-Kerr Range; as there was no prospect of that mountainous scrubby region being turned to account, for the purposes of settlement, for a considerable time to come.

I have to regret that our brief exploration of Bellenden-Kerr was not attended with the results I anticipated. From the point of departure on the north branch of the Mulgrave to the summit of the range, almost every yard of the way had to be cut through scrub or dense vegetation. The period allowed for the trip, four days, was sufficient only for accomplishing the ascent, and thunder storms and mists also greatly obstructed us. I saw enough, however, to ascertain that the range, and no doubt other portions of the neighboring mountainous region, must be rich in new plants and species, and afford a great field for botanical research. But a thorough exploration, instead of being confined to four days, would occupy, perhaps, twice as many mouths. I succeeded in securing some species that are new, and several others that are rare and interesting; but it must be allowed that I could not have done very much in the short period at my command, and where so much of the course taken lay through what has been described as a "jungle," impenetrable except by cutting a road.

On the 26th of November, a party, consisting of Sub-Inspector Johnstone, myself, and eight native troopers, started to ascend Bellenden-Kerr, by what appeared to be a promising leading spur. We had only four days allowed us. The first two miles of our course led through low ground, which after much wet weather must become a swamp. The vegetation consisted of the *Barringtonia Carya*, F. M.; *Ptychosperma Alexandrae*, F. M. (the Alexandra Palm), *Calamus Australis*, Mart. (Lawyer Cane), *Bambusa Arundinacea*, Retz (Bamboo Cane), *Pandanus Aquaticus*, F. M. (Screw Pine), &c., &c. Whilst on the higher portion of the ground were *Wormia alata*, R. B.; *Dysoxylon oppositifolium*, F. M.; *Aglaia elaeagnoides*, Benth, Lawyer Cane, Bamboo Cane, Screw Pines, and others.

We then crossed a fine watercourse, at a place to which the name of Davy's crossing place was given; and the stream itself, without being formally named, was referred to as the Bellenden River. The bed was filled with large granite boulders, many of which were covered with a creeping fern (*Hymenophyllum demissum*, Swartz), and the water beautifully clear and cold.

The trees along the banks consisted of the genera, *Castanospermum*, *Eugenia*, *Brucea*, *Ximenia*, *Elaeocarpus*, *Owenia*, &c., &c. The soil on both sides was of a sandy nature, with a good admixture of vegetable matter. It took us three hours to reach this place, which was guessed at being three miles from the point of departure, having risen, according to the aneroid, to an elevation of one hundred and sixty feet.

feet. Having found a spur, it took us four and a-half hours to make a distance of one and a-half miles, through a complete mass of bamboos, lawyers, and screw pines; and then camped for the night on a small incline between two ridges at an elevation of only 1,250 feet.

The trees consisted of *Erioglossum edule*, Bl.; *Cupania Robertsonii*, F. M.; *Atalaya salicifolia*, Bl.; *Harpullia Leichhardtii*, F. M.; *Castanospermum Australe*, Cunn.; *Mimusops parvifolia*, Br.; *Achras Pohlmanniana*, F. M., &c., &c. The thick growth of the *Pandanus* was not one of the least obstacles we had to encounter in the ascent. There were here one tree fern (*Alsophila Rebeckae*, F. M.) and also the fine climbing fern (*Gleichenia Hermannii*, R. B.), which runs up to a height of fifty or sixty feet, and extends so much that in places we had to cut our way through it.

Proceeded on our way the following morning; the bamboos continued until we had reached an altitude of two thousand feet. We still had to make a road through the lawyer cane, and *Pandanus*, the walking-stick palm (*Areca monostachya*) also growing thickly. It was at this height that I met with two new species of palm. One was a beautiful plant about twenty feet high, with leaves or fronds twenty feet long, and the stem about nine inches in diameter. This not being the right season to obtain either flower or fruit, I was, unfortunately, unable to name the palm. The other is, I believe, a *Kenti*; it is about twelve feet in height, and three inches in the diameter of the stem, with suckers shooting from the bottom. I also noticed a new orchid (*Anoetochilus*) and a small tree fern (*Alsophila Robertsoniana*) that I had before observed on the Moresby Range. The tree fern (*Alsophila Rebeckae*) was the most difficult to get through, being entangled with *Smilax elliptica*, R. B., and *Flagellaria Indica*, Willd., &c. On the middle of the day we camped, at a height of 1,700 feet, being only 500 feet higher than we were on starting in the morning; we expected to reach the summit by night, but only got to the altitude of 3,300 feet. A superb *Proteaceae* tree, about sixty feet in height, with glorious crimson blossoms, a description of which is given below, was observed at 2,500 feet, and the beautiful new *Anoetochilus* was not seen after reaching 2,000 feet; but we had still to contend with the *Calamus* and *Pandanus*, and the *Alsophila Rebeckae* was the greatest annoyance we met. On our way up we passed a new species of *Dammara*, also a *Podocarpus*, both small trees and not in fruit. Where we camped we found *Moraea Robinsoni* and *Kenti* in great abundance, but neither was in flower.

After starting the next morning, we passed through the same description of vegetation, the *Alsophila* being still troublesome. The crests of the rises were rocky, and the trees and shrubs stunted. In three hours we reached the foot of the last incline, eight hundred feet from the summit. We were without water, but some was found about half-a-mile down a gully. Whilst it was being procured and tea made, I took a walk and found a very handsome tree fern, a botanical description of which is given below. It was about forty feet high, and twelve inches in diameter four feet from the ground. The stem has a singular red appearance, as have also the fronds, which are clothed with bristles. I procured four plants of it. Close by I found *Moraea Robinsoni* in flower, and the beautiful palm I noticed on the previous day; it is from forty to sixty feet in height; no flower nor fruit was to be seen; I obtained two young plants with difficulty, as they appear to be scarce, probably because the fruit is a favorite food with some birds or other animals. We reached the top of the range about noon, without observing any vegetation different from what we saw before. The crest is covered with stunted trees and shrubs. During our short stay—an hour—I collected the following:—*Helicia ferruginea*, F. M.; *Carnarvoniana aralifolia*, F. M.; *Piptosporum ferrugineum*, Ait.; *Rursaria spinosa*, Curan; *Melaleuca foliolosa*, Cunn.; *Trichocarpa laurina*, R. B.; *Alsophila Rebeckae*, F. M.; *Tmesopteris Tannensis*, Bhd; *Kenti*, *Tradescantia*, &c., &c.

The aneroid barometer showed that we were 5,300 feet above the level of the sea, and on a clear day a very fine view of the surrounding scenery can, no doubt, be obtained; but everything below was hidden by mist, and the clouds threatened rain. No observation could be taken, for the purpose of marking the position of the prominent points in the country around, and, as no provision had been made for a longer stay, we had to return. Shortly after leaving, on our downward progress, a heavy thunder-storm broke overhead and wet us thoroughly.

We camped for the night at the foot of the incline, which we had left in the morning, but the mist still continued so thick that I could not proceed any distance to collect. However, during a ramble into the gully, I saw a fine specimen of the *Platyserium alciorne*, var. *magus*, and a splendid tree, one of the *Dammara*, which could not be less than one hundred and twenty feet in height, with a barrel four feet through. I would have liked to have got a cone, but the native troopers were so completely knocked up that they were unable to leave the camp, much less to climb a tree. There were several lofty trees about the place, amongst which I noticed *Cardwellii sublimis*, F. M., *Darlingia spectatissima*, F. M., *Elcocarpus faveolatus*, F. M., also others whose names I could not determine, through being unable to obtain specimens. I gathered some seeds of *Erioglossum edule*, Bl., and of *Kenti*, and a few of *Areca minor*. There were scarcely any plants in flower or fruit. The trees and rocks were covered with lichens and mosses, and also a few orchids. The previous dryness of the season, however, appeared to have parched up all the mosses and lichens, none of them being in a fit state for collecting.

We started at six o'clock next morning, and at nine reached the crest or peak where we intended to take observations. We remained about half-an-hour, during which I gathered all that was to be had in leaf, flower, or fruit. This was the only point during the ascent or descent from which we had a good view of the rivers and surrounding country. We could see large plains at the head of the north branch of the Mulgrave, and also had a clear prospect of Trinity Inlet, which was evidently encompassed by mangrove swamps. Part of Mount Walsh appeared to be on the watershed of the Mulgrave, while the remaining portion seemed to slope towards the shores of Trinity Inlet. The course of the South Mulgrave was plainly visible for some miles, and Mr. Johnstone thought he observed plains, but was not certain.

About half-an-hour after leaving the peak where we halted, a thunder storm, accompanied by a heavy fall of rain, broke upon us and put a stop to all collecting; hiding from view even the tops of the trees. We had some difficulty in finding the beautiful *Proteaceae* tree we saw when ascending the range, but fortunately managed to come across it again, and secured specimens. In our downward course, crossing the Bellenden River and following our former track to where the boat was waiting, the rain was heavy and continuous, drenching every one of the party to the skin, and preventing specimens from being obtained that had before been marked for collection. During the four days of our trip the work was very laborious, and the native troopers who accompanied us became at last completely exhausted.

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I have to report that the ascent of Bellenden-Kerr resulted in the hope being greatly disappointed that I entertained of making many valuable botanical discoveries. This may be considered as fully accounted for by the fact that for three out of four days for which the party was provisioned, we had to cut a pathway the whole distance along a razor-back ridge, in many places only eighteen inches in diameter. I have still every reason to believe, however, that the visit of a collector to Bellenden-Kerr, of sufficient knowledge and able to withstand the hardships that would have to be encountered, for about nine months, during which time all the vegetation will be in flower or fruit and young plants can be obtained, would be of advantage not only to botany as a science, but also to its practical and economic application.

The main purpose of the Expedition was the exploring of a certain portion of the north-east coast of Queensland; but, as I have before stated, the work having to be done in boats, the country back from the rivers was frequently cut off by dense mangrove swamps of considerable extent. A land expedition, if sufficiently equipped (or even the one with which I was associated), had time and means permitted, could have given a complete description of the coastal region beyond the country lying along the banks of the navigable watercourses. Enough, however, has been ascertained to prove that over a great part of the tract, which we could penetrate only here and there as openings presented themselves, the soil is well adapted for cultivation. On the low lying land not subject to be flooded, the sugar-cane will flourish well, and at present will be considered the most valuable crop; although here and upon the less level portions almost every tropical plant of economic value would succeed. My report of the 30th January last has stated what I saw; I may now add to what I then expressed, that I feel certain that the country, which at that time was examined only along the rivers, or in some cases for a mile or two inland, will be found of the most valuable description for nearly every kind of tropical cultivation, and it would be of great loss to the colony were it alienated for any other purpose. Through unavoidable circumstances, the knowledge I have learned from observation is only of a small portion of a very large area of country, which by inference I believe to be a superior character. It would afford me much pleasure to be allowed to examine this new country again and to go farther into it, more especially along the Daintree River, where I believe there is a large extent of agricultural land beyond that which I saw; and it may yet be found the direct road in every season to the Palmer River gold field. Unquestionably the scenery about the Daintree is most beautiful, and I am sure that it will yet become a most valuable centre of settlement.

I append description of some of the more remarkable plants discovered whilst I accompanied the North-east Coast Expedition. The list might be added to, but the rest are not of general interest, or they are noted for observation at a future period when in flower and fruit.

I have, &c.,

WALTER HILL,

Colonial Botanist and Director of Botanic Garden.

The Honorable The Secretary for Public Lands, Queensland.

APPENDIX.

DESCRIPTION OF SOME OF THE PLANTS DISCOVERED DURING THE NORTH-EAST COAST EXPEDITION.

Areca Minor, *W. H.*.—This species of palm forms elegant tufts; caudex 2 to 5 feet high, about $\frac{1}{2}$ an inch in diameter, crowned with a tuft of 12 to 16 leaves or fronds, which are nearly $3\frac{1}{2}$ feet long, pinnated, with about 12 or 14 more or less broadly lanceolate, subfalcate striated leaflets, the uppermost or terminal pair more or less combined, petiole triquetrous grooved above the lower portion, forming a somewhat inflated sheath around the stem. From the axils of three or four of the lower leaves a spathe arises: this consists of one long tubular sheathing scale, and from this the long panicle of flowers depends, almost as long as the leaves; flowers not seen, fruit oblong, about $\frac{3}{4}$ of an inch long, reddish, with a thin coat of flesh.

Hab.—In rich alluvial soil, on the banks of the Moresby and Russell Rivers, and the Bellenden-Kerr Ranges.

Cocos Normanbyi, *W. H.*.—Caudex or trunk forms a graceful erect column of 40 to 60 feet high and 6 to 8 inches in diameter, more slender upwards, jointed as it were with annular scars of the fallen leaf stalks; these rings are 6 to 8 inches apart, crown of leaves or fronds extremely beautiful; each leaf is 8 to 10 feet long, petiolate, lanceolate, pinnate, recurved; pinnae numerous on the rachis, usually 8 aggregated, springing from near each other, petiole sub-angular at the base, spadix, axillary, 2 to 3 feet long, arising from axil of the leaf stalks, flowers not seen. Fruit red, globose droups about the size of walnuts.

Hab.—In rich alluvial soil on the banks of the Daintree River.

This fine species of palm is named after the present Governor of Queensland.

Dicksonia Herberti, *W. H.*.—Caudex or trunk, 30 to 40 feet high, 12 inches in diameter 4 feet above the ground, crowned with beautiful, graceful fronds, 9 to 12 feet long; bipinnate, lower pinnae 12 to 15 inches long, 6 to 8 inches broad, pinnae of the baron frond linear acuminate, cut down within a short distance of the rachis above, quite to it below; segment $\frac{1}{2}$ inch long, $\frac{1}{4}$ inch broad, rachis rough, densely clad with long reddish bristles or hairs; fertile pinnae, much contracted, cut down nearly to the rachis, sori 1 to 10 to a lob $\frac{1}{2}$ line across; valves of the invol suborbicular, nearly equal.

Hab.—Bellenden-Kerr Range, at an elevation of 4,500 feet.

This fine tree fern is called after the first Colonial Secretary and Premier of Queensland, who still takes every opportunity of evincing his strong interest in everything connected with the colony.

Oreocallis Wickhami.—A tree of moderate size, attaining a height of sixty feet, with a diameter of twenty inches, branches terete, brown wood, leaves shortly oblong, oval, approaching to elliptical, form coreaceous, two to six inches long, entire, penninerved, obtuse, dark green above and reddish underneath. Racemes numerous, terminal, sessile, many flowering; rachis pale green; pedicels red, more than one inch long; flower bright crimson, in bud one and a-half inch long, tubular, forming a globose head separating near the apex in four spatulate lobes, in the concave apices of which the sessile oblong anthers are embedded, very elongated, cylindrical, shortly stipulate, bearing a prominent gland on the upper

upper side of the stipe, tapering gradually into a red exerted style; stigma oblong, red.

Hab.—This superb flowering tree was found at an elevation of 2,500 feet, on Bellenden-Kerr Range. The genus was only known to exist in S.W. America.

Named after Captain J. C. Wickham, R.N., for many years Government resident at Moreton Bay, up to the time of separation from New South Wales, and who introduced several useful and ornamental plants into what is now the colony of Queensland.

Dendrobium Nindi, W.H.—Stems from four to six feet long, of a black shining color, leaves bifarious, oval, or elliptical, obtuse or emarginate, two to three inches long, thick and somewhat undulate; racemes drooping, lateral, arising from the upper part of the stem, bearing eighteen or more large purple lilac flowers.

Hab.—On trees overhanging tidal streams, Moresby and Johnstone Rivers.

In honor of Mr. Nind, who accompanied the North-Eastern Coast Exploring Expedition, and assisted its objects on several occasions on the Moresby and Johnstone Rivers.

Musa Jackeyi, W.H.—Herbaceous; stem black, simple, thirty to forty feet long, thickly clothed with sheathing petioles of the leaves; leaves oblong, six to seven feet long, forming a tuft on the apex of the stem; spadix erect, flowers compound, rising from the apex of the stem, each division enclosed in a spathe, with male flowers at the base, female or hermaphrodite ones at the upper end. Fruit short, horizontal, three to five cornered, with numerous seeds buried in pulp; flowers yellowish, limph of the old stem red could be used as marking ink.

Hab.—In rich alluvial soil, on the banks of the Johnstone River.

A new banana with black stem, named after the faithful and affectionate attendant of the explorer Kennedy.

Musa Charloti, W.H.—Herbaceous, stem, dingy-green, simple, thirty to forty feet long, thickly clothed with sheathing petioles of the leaves, leaves oblong, five to six feet long, forming a tuft on the apex of the stem; spadix nodding, fruit obliquely elliptical, oblong, three to four inches long, fleshy, with numerous small hard dry seeds.

Hab.—In rich alluvial soil on the banks of the Johnstone River.

A new variety of what is popularly termed wild banana, called after one of the troopers of the Native Police who was found very useful upon the expedition.

APPENDIX.

NAMES OF THE RECIPIENTS OF THE MOST VALUABLE DONATIONS.

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